



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
DIVISION OF WASTE AND HAZARDOUS SUBSTANCES
SOLID AND HAZARDOUS WASTE MANAGEMENT SECTION

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Permit SW-19/XX
Permit Type: Fly Ash Pond Post-Closure Care

Effective Date: [DATE HERE]
Last Modified: n/a
Expiration Date: [DATE HERE]
Permittee: Motiva Enterprises, LLC
4550 Wrangle Hill Road
Delaware City, Delaware 19706

Pursuant to 7 Del. C., Chapter 60, Section 6003 and Delaware's *Regulations Governing Solid Waste*, the Delaware Department of Natural Resources and Environmental Control issues this permit to Motiva Enterprises, LLC, for the post-closure care of Fly Ash Settling Pond 2, located within the boundary of the Delaware City Refinery. All terms and conditions of this permit are enforceable by the Department.

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I. GENERAL CONDITIONS

A. Permit Modified

Pursuant to provisions of Delaware's *Regulations Governing Solid Waste* (DRGSW), the Delaware Department of Natural Resources and Environmental Control (the Department) hereby issues Permit SW-19/XX for the post-closure care of Fly Ash Settling Pond #2 (FAP #2) and recordkeeping requirements associated with Fly Ash Settling Pond #1 (FAP #1). FAP #1 and FAP #2 were formerly operated by Motiva Enterprises LLC (Motiva) on the grounds of the Delaware City Refinery (DCR), located at 4550 Wrangle Hill Road, Delaware City, Delaware 19706. FAP #1 was cleaned closed while FAP #2 was closed with waste in place. Permit SW-19/XX replaces Permit SW-96/01.

B. Applicability

This permit applies to:

1. FAP #2, formerly operated by Motiva, on the grounds of the Delaware City Refinery.
2. The environmental monitoring, recordkeeping, and reporting for FAP #2.
3. The post-closure care of FAP #2.
4. Recordkeeping for FAP #1.

C. Permit Application Documents

1. Permit SW-96/01 was modified on May 29, 2009 to initiate closure activities in accordance with the following Closure Application Documents submitted by Motiva:
 - a. *Plans for Final Closure and Post-Closure Care, Motiva Fly Ash Ponds, Delaware City Refinery, Delaware City, Delaware* (volumes I through IV), prepared by URS Corporation and submitted by Motiva on December 29, 2006 (appended version of *Closure Plan for Flyash Settlers*, January 2003).
 - b. *Sampling and Analysis Plan Lining System and Subgrade Soils Fly Ash Pond No. 1, Delaware City Refinery, Delaware City, Delaware*, prepared by URS Corporation and submitted by on behalf of Motiva on November 8, 2007.
 - c. *Bench-Scale Crystallization Testing Plan for Fly Ash Pond No. 1 Motiva Fly Ash Ponds Delaware City Refinery Delaware City, Delaware*, prepared by URS Corporation and submitted by Motiva on February 19, 2008.
2. Permit SW-19/XX was issued on [DATE HERE] for the post-closure care of FAP #2 and recordkeeping requirements associated with FAP #1 in accordance with the following documents:

- a. *Fly Ash Pond 1 & 2 Closure* certification report, prepared by URS Corporation and submitted by Motiva on September 14, 2012 with an amended version submitted on July 24, 2013.
- b. The *Post-Closure Plan* for the Fly Ash Pond #2 dated July 2019 and the documents referenced therein.

c. Secretary's Order No. XXXXX

3. Other plans, standards, letters, procedures, and policy specifically referenced in this permit.
4. All previously approved and applicable documents, applications, or correspondence.

D. General Conditions

This permit is issued subject to the following general conditions:

1. Motiva shall conduct activities at FAP #2 in compliance with this permit and all applicable federal, state, county, and municipal environmental statutes, ordinances, and regulations, including, but not limited to: Delaware's *Regulations Governing Solid Waste*, Delaware's *Regulations Governing Hazardous Waste*, Delaware's *Regulations Governing the Control of Water Pollution*, the *Delaware Surface Water Quality Standards*, and Delaware's *Regulations Governing the Control of Air Pollution*. This general condition shall apply to all persons or entities conducting any activity at FAP #2 on behalf of Motiva.
2. Any transfer of this permit shall be done in compliance with the requirements of DRGSW, including post-closure care financial assurance. Motiva shall not transfer this permit until they have established a valid Environmental Covenant in accordance with the requirements of 7 Del. C., Chapter 79, Subchapter II. Until transfer of the permit has been completed, Motiva shall continue to maintain control of, and responsibility for, FAP #2 in compliance with this permit and DRGSW, including, but not limited to the requirements for financial assurance, post-closure care, recordkeeping, reporting, monitoring, and corrective actions.
3. Motiva shall maintain a readable and easily accessible copy of the most current version of this permit at the DCR Administration Building located on Wrangle Hill Road, or an alternate location approved by the Department. In addition, Motiva shall ensure that entities acting on behalf of Motiva at FAP #2 during the Post-Closure Care Period have ready access to the permit.
4. Motiva shall ensure that any confined space entry at FAP #2 is done in accordance with 29 CFR §1910.146.

5. Employees at the facility shall work under appropriate health and safety guidelines established by the Occupational Safety and Health Administration (OSHA). First aid equipment shall be available at the facility and a reliable telephone or radio communication system shall be provided at the facility.
6. Upon issuance, Permit SW-19/XX shall remain valid and enforceable throughout the Post-Closure Care Period of FAP #2. Motiva began the Post-Closure Care Period for FAP #2 on July 24, 2013.
7. The Department has the authority to modify this permit at any time.

II. POST-CLOSURE CARE

Throughout the Post-Closure Care Period, Motiva shall provide for post-closure care of FAP #2 in accordance with this permit and DRGSW, including the following minimum requirements:

A. General Requirements

1. Motiva shall continue to monitor groundwater in accordance with Permit Conditions III.A and III.B.
2. Motiva shall continue to monitor leachate in accordance with Permit Conditions III.A and III.C.
3. If at any time during the Post-Closure Care Period, there is evidence of a contaminant release from FAP #2 that presents a significant threat to human health or the environment, Motiva shall take immediate action to mitigate the threat.
4. Motiva shall not allow the disposal of solid wastes at FAP #2 during the Post-Closure Care Period. Disposal of solid waste at FAP #2 is strictly prohibited.
5. Open burning shall not be allowed on any closed portion of FAP #2.
6. Unless approved in advance by the Department, or allowed by this permit, no activity shall be conducted on FAP #2 during the Post-Closure Care Period.
7. Throughout the Post-Closure Care Period, Motiva shall provide a representative authorized to act on the behalf of the company in regulatory discussions or other matters arising from administration of this permit and who can act as the point of contact for emergencies involving the facility. Motiva shall provide this information to the Department and to the owners of the Delaware City Refinery and report any changes to contact information within ten (10) business days. The information must include the person's name, title, telephone number, email address, geographical address, and mailing address.

8. Throughout the Post-Closure Care Period, Motiva shall maintain financial assurance for all remaining post-closure care obligations for FAP #2 in accordance with the requirements of DRGSW. Motiva shall not use financial tests and guarantees for assuring funds for FAP #2's Post-Closure Care Period or for corrective actions. Motiva shall provide proof of financial assurance annually in accordance with the requirements of Permit Condition IV.A.

B. Access

1. Access to FAP #2 by unauthorized persons shall be prevented by barriers, fences, gates, or other suitable means. Representatives of the Department may inspect FAP #2 at any reasonable time to verify compliance with the permit (7 Del. C., Section 6024).
2. Motiva shall post and maintain signs at all access points identifying the operator (Motiva), stipulating that facility access is restricted, and disclosing that the facility is a closed landfill regulated under DNREC Solid Waste Permit SW-19/XX.
3. Motiva shall inspect access controls, including the fences, gates, and signage, at least quarterly. Motiva shall document observations made during the inspection using a form acceptable to the Department and shall promptly correct all deficiencies required to maintain compliance with this permit. Motiva shall maintain records of these inspections in accordance with Permit Condition V.A.5.

C. Protection of Landfill Control Systems

During the Post-Closure Care Period, Motiva shall protect landfill control systems from damage, including the landfill liner, the membrane cap, the leachate collection and management system, and the surface water management system.

D. Cap Maintenance and Protection

1. Motiva shall maintain the integrity and effectiveness of the capping system. Motiva shall inspect the cap components weekly for signs of settling, subsidence, erosion, burrowing animals, and other damage to the cap. Motiva shall document observations made during the inspection using a form acceptable to the Department and shall promptly correct all deficiencies required to maintain compliance with this permit. Motiva shall report and maintain records of these inspections in accordance with Permit Conditions IV.E and V.A.5.
2. Except as allowed below, Motiva shall not remove or alter any portion of the cap without the written approval of the Department. Motiva may make the following repairs to the cap as long as the repairs do not damage landfill control systems or reduce the effectiveness of the cap:
 - a) Major repairs to the geomembrane or geonet require Department approval; however, Motiva may initiate minor repairs to these materials after first providing

notification to the Department. For the purpose of this permit, minor repairs are considered repairs to damaged areas of geomembrane or geonet measuring less than two (2) feet in any direction. All minor repairs must be done in accordance with the original manufacturer's guidelines. Within thirty (30) days of completion of the repair, Motiva shall provide a formal report certifying the method and quality of the work completed, qualifications of staff performing the repair, and whether or not the integrity of the cap has been compromised. The report shall be signed and sealed by a Professional Engineer registered in Delaware.

- b) Without written approval, Motiva may disturb the top six (6) inches of the cap (the topsoil) for maintenance, regrading, or seeding as long as sediment and erosion controls are properly employed, only clean topsoil is used, and the thickness of the cap is not diminished upon completion of the work. For the purpose of this permit, clean topsoil means the natural, unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants, and which can perform as the vegetative layer on the landfill cap. Clean topsoil contains no trash, debris, or solid waste and cannot be from a state or federal cleanup site. Analytical testing of clean topsoil is not typically required unless its origins are unknown or there is reason to suspect contaminants may be present which may pose an increased risk to human health or the environment.
 - c) Motiva may also fill in erosion rills, gullies, and burrows of any depth (over undamaged geomembrane/geonet only) with clean soil/top soil and then seed to establish vegetation. For the purpose of this permit, clean soil means the natural, unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants, and which can perform as the vegetative layer on the landfill cap. Clean soil contains no trash, debris, or solid waste and cannot be from a state or federal cleanup site. Analytical testing of clean soil is not typically required unless its origins are unknown or there is reason to suspect contaminants may be present which may pose an increased risk to human health or the environment.
- 3. Motiva shall mow the vegetative cover on capped portions as needed or at least twice per calendar year.
 - 4. Motiva shall remove any sapling trees from capped portions of the landfill.

E. Surface Water Management

- 1. Motiva shall manage surface water on FAP #2 to minimize the erosion of the cap and prevent the run-off of sediments. Motiva shall provide for, and maintain a permanent, long-lived vegetative cover on FAP #2.
- 2. Motiva shall properly maintain the surface water management system at FAP #2. Motiva shall coordinate cleanouts and maintenance involving structural repairs with DNREC's Sediment and Stormwater Program or DNREC's Division of Water, as

applicable.

3. Motiva shall inspect the surface water controls at least quarterly, and immediately after a rainfall of 2 inches or more in a 24-hour period. Motiva shall document observations made during the inspection using a form acceptable to the Department and shall promptly correct all deficiencies required to maintain compliance with this permit. Motiva shall report and maintain records of these inspections in accordance with Permit Conditions IV.E and V.A.5.
4. Motiva shall prevent the accumulation of standing water on FAP #2 for a period longer than 24-hours after a rain event. If standing water reoccurs at the same location after two (2) or more non-consecutive rain events, Motiva shall remedy the situation in a timely manner.
5. Motiva shall conduct an initial periodic review, and all subsequent periodic reviews, of the surface water management system(s) in accordance with DRGSW.

F. Leachate Management

1. Motiva shall operate, protect, and maintain the leachate collection system, including all manholes (MH-1, MH-2, and MH-3), pumps, flow meters, recording devices, sample ports, cleanouts, and force mains from damage.
2. Motiva shall operate the leachate collection system to maintain less than twelve (12) inches of head on the liner. Motiva shall measure leachate head in a location acceptable to the Department.
3. The Action Leakage Rate (ALR) from the leachate collection system in FAP #2 is 1000 gallons/acre/day, as averaged over a seven-day period. Motiva shall operate and maintain the leachate collection system so as to not exceed this leakage rate. Motiva shall report and discuss any exceedances as part of the Annual Environmental Monitoring Report (Permit Condition IV.B). The Department may require additional corrective measures in the event that flow rates in the leachate collection system exceed the ALR or if there is an indication of a contaminant release.
4. Motiva shall inspect the leachate flowmeters, valves, cleanouts, pumps, totalizers, and recording devices at least once every seven (7) days to ensure proper functioning and record flows. Motiva shall document the observations and deficiencies found during these inspections on a form acceptable to the Department. Motiva shall report and maintain records of these inspection in accordance with Permit Conditions IV.E and V.A.5.
5. Motiva shall notify the Department in accordance with Permit Condition IV.E upon the discovery of inoperable pumps or flow meters and shall provide a schedule for repair or replacement in writing. Unless otherwise approved by the Department, Motiva shall repair or replace inoperable pumps or flow meters within fourteen (14) days of

discovery.

6. If damage to the leachate conveyance pipe is discovered, Motiva shall immediately cease using that line and complete repairs within fourteen (14) day of discovery, unless otherwise approved by the Department.
7. Motiva shall immediately clean-up all leachate spills and shall report leachate spills in accordance with Permit Condition IV.E.
8. Motiva shall ensure that leachate collection pipes and manholes are inspected and cleaned once every two (2) years. Motiva shall identify, assess, and report all blockages encountered and shall identify any areas found to be inaccessible during the biennial inspections and cleanings. At its discretion, the Department may waive the biennial inspection and/or cleaning for any particular year if, after demonstration by Motiva, it determines that an inspection and/or cleaning is not required. Motiva shall document the results of the inspection and cleaning and provide a written assessment of these inspections in accordance with Permit Conditions IV.C and IV.D.

G. Pollution Control

1. Motiva shall take all necessary precautions to identify and prevent the discharge of pollutants from FAP #2 into groundwater or surface water.
2. Motiva shall take all practicable steps to prevent leachate from contaminating surface water, including stormwater ponds and conveyances located off the lined areas of the landfill.
3. Motiva shall inspect FAP #2 and adjacent surface water channels for leachate at least once each month. Motiva shall document observations made during these inspections using a form acceptable to the Department. Motiva shall maintain records of these inspections in accordance with Permit Condition V.A.5.
4. Motiva shall manage any surface water contaminated with leachate as wastewater. If leachate is found to be contaminating surface water, Motiva shall report this in accordance with Permit Condition IV.E and shall initiate immediate corrective measures to stop the contamination and to manage the contaminated surface water as landfill wastewater. Motiva shall also initiate additional environmental sampling in accordance with Permit Condition III.D.
5. In the event leachate is found to be contaminating surface water, Motiva shall conduct and record daily visual inspections of impacted/potentially impacted surface waters until Motiva has completed the necessary corrective measures to remove the wastewater and prevent further contamination.

H. Maintenance and Preservation of Groundwater Monitoring Wells

1. Motiva shall maintain and protect all groundwater monitoring wells associated with FAP #2 in accordance with Delaware's *Regulations Governing the Construction and Use of Wells*. Motiva shall implement controls to protect these groundwater monitoring wells from damage and shall ensure that groundwater monitoring wells remain accessible for environmental monitoring required by this permit. Motiva shall report any damage to groundwater monitoring wells in accordance with the reporting requirements of Permit Condition V.E.
2. Motiva shall replace any groundwater monitoring well that can no longer be used to provide monitoring data required by this permit. Motiva shall notify the Solid and Hazardous Waste Management Section (SHWMS) at least fifteen (15) days prior to installing or abandoning any groundwater monitoring wells. The installation of new groundwater monitoring wells or abandonment of existing groundwater monitoring wells shall be performed in accordance with Delaware's *Regulations Governing the Construction and Use of Wells* after receiving approval from the SHWMS to proceed.
3. Motiva shall inspect each groundwater monitoring well at least once per quarter. Motiva shall document the observations made during the inspections using a form acceptable to the Department and shall promptly correct all deficiencies required to maintain compliance with this permit. Motiva shall maintain records of these inspections in accordance with Permit Condition V.A.5.

I. Litter

1. Motiva shall provide for litter removal and general cleanliness of FAP #2 during the Post-Closure Care Period.
2. Motiva shall inspect FAP #2, including its surface water management system and on-site roads, for litter at least quarterly. During each inspection, Motiva shall document observations and deficiencies using a form acceptable to the Department. Motiva shall maintain records of these inspection in accordance with Permit Condition V.A.5.

J. Odor

1. Motiva shall maintain the landfill cap to prevent the generation and escape of landfill odors. Motiva shall control malodorous gaseous emissions from the landfill to the extent that there is no perceivable landfill odor beyond the property boundary.
2. Motiva shall inspect FAP #2 for landfill gas odors at least quarterly. During each inspection, Motiva shall document observations and deficiencies using a form acceptable to the Department. Motiva shall maintain records of these inspections in accordance with Permit Condition V.A.5.

K. Contingency

Motiva shall provide for emergency response to fires, spills, and other emergencies at FAP

#2 and shall provide for an Emergency Coordinator and at least one alternate Emergency Coordinator responsible for directing emergency response activities necessary to protect human health and the environment. Motiva shall ensure that at least one Emergency Coordinator is available at all times. Motiva shall record and report contact information for the Emergency Coordinator in accordance with Permit Condition IV.D.3.

III. MONITORING

A. General Requirements

1. All water quality samples shall be collected in a manner that minimizes sample turbidity. All groundwater-quality samples shall be collected using a low-flowrate method to minimize sample turbidity. Metal samples will be field filtered ONLY if the turbidity *exceeds* 10 nephelometric turbidity units (NTU). Repeated sampling of any well where the turbidity exceeds 10 NTU's is not permitted without specific Department approval.
2. Each groundwater monitoring well shall be sounded during each water-level measuring event and after the completion of sampling at each groundwater monitoring well.
3. All water-quality samples will be measured for the following field parameters at the time of sample collection:

Dissolved Oxygen (DO)	Temperature
pH	Total Dissolved Solids (TDS)
Oxidation-Reduction Potential (ORP)	Turbidity
Specific Conductance	

Field parameters shall be recorded after field parameters have stabilized as specified in the *Site-Wide Sampling and Analysis Plan Delaware City Refinery RCRA Facility Investigation, Post-Closure and Corrective Action Program (May 2019)*.

4. All water-quality samples will be laboratory-analyzed for the following indicator parameters:

Chloride	pH	Total Dissolved Solids (TDS)
Iron	Sodium	Vanadium
Manganese	Specific Conductance	
Nickel	Sulfate	

5. Motiva shall analyze all leachate, groundwater, and surface water samples required by this permit in accordance with the most current legal edition of EPA Publication Number SW-846. If SW-846 does not contain a test method for a required parameter, that parameter shall be tested according to methods described in the most recent edition of EPA Publication, *Methods of Chemical Analysis for Water and Wastes* or *Standard Methods for Examination of Water and Wastewater*.

6. The Department may observe sampling events conducted by Motiva and may request split samples for analysis. Representatives of the Department may also enter the facility to collect samples for analysis by an independent laboratory.

B. Groundwater Monitoring

Motiva shall conduct groundwater monitoring as specified in the *Site-Wide Sampling and Analysis Plan Delaware City Refinery RCRA Facility Investigation, Post-Closure and Corrective Action Program (May 2019)* and in accordance with the requirements of this permit.

1. Annually, during October, Motiva shall measure water elevations in the following groundwater monitoring wells:

C1	C3	C21	C23	C28	C36	C39
C2	C4	C22R	C24	C30	C38	

Motiva shall prepare potentiometric maps for the Columbia aquifer showing the location of each well, the contoured potentiometric surface, and the directions of groundwater flow. These maps shall include an outline of former FAP #1, FAP #2, and the adjacent property boundaries of the facility.

2. Annually, during October, Motiva shall collect samples from the groundwater monitoring wells below and analyze for the water-quality parameters specified in Permit Condition III.A.

C21	C22R	C23	C24	C38	C39
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C. Leachate Monitoring

1. Annually, during October, Motiva shall collect leachate samples from Manholes 1, 2, and 3 at FAP #2. Motiva shall conduct leachate monitoring as specified in the *Site-Wide Sampling and Analysis Plan Delaware City Refinery RCRA Facility Investigation, Post-Closure and Corrective Action Program (May 2019)*. If liquid is not available, Motiva will record that observation and include it in the reports required by this permit. Leachate shall be analyzed for the water-quality parameters specified in Permit Condition III.A and for the following additional parameters of concern:

Calcium	Total Alkalinity
Chemical Oxygen Demand (COD)	Zinc
Chromium	

D. Surface Water Monitoring

In the event leachate is found to be contaminating surface water, Motiva shall initiate

corrective measures and also promptly sample the impacted surface water and the inlet/outlet at the receiving body of water/stormwater pond. Motiva shall conduct surface water monitoring as specified in the *Site-Wide Sampling and Analysis Plan Delaware City Refinery RCRA Facility Investigation, Post-Closure and Corrective Action Program (May 2019)*. Samples must be analyzed for water-quality parameters specified in Permit Condition III.A and the following additional parameters of concern:

Calcium	Total Alkalinity
Chemical Oxygen Demand (COD)	Zinc
Chromium	

IV. REPORTING

A. Financial Assurance

Annually, no later than March 31st of each year, Motiva shall provide assurance that the financial costs associated with the post-closure care and corrective action (if required) can be met. Motiva shall demonstrate financial assurance with a valid financial assurance mechanism in accordance with Section 4.1.11.2 of DRGSW and shall provide detailed and accurate cost estimates that have been adjusted for inflation for each cost estimate as applicable (post-closure care and corrective actions).

B. Annual Environmental Monitoring Report

Annually, no later than January 31st of each year, Motiva shall submit two (2) paper copies and one (1) electronic version, in a format acceptable to the Department, of the Annual Environmental Monitoring Report for the preceding calendar year. At a minimum, the electronic version must be tabbed and/or bookmarked by major section to facilitate searching and retrieval of information. Motiva shall include the following information in the Annual Environmental Monitoring Report:

1. The report shall include a dated title page, a page identifying the preparer including the signature and PG seal, and a detailed table of contents, including a section that details the contents of the electronic media submittal.
2. Motiva shall include a discussion of findings, conclusions, and recommendations based upon the environmental monitoring results. The narrative portion of the report shall address:
 - a. A description of the annual monitoring activities.
 - b. Groundwater monitoring results, including whether the results indicate a contaminant release from FAP #2 to groundwater, and any corrective measures taken or anticipated.
 - c. Leachate collection system monitoring results, including a discussion of the performance of the final cover system and liner system as indicated by the ALR

- and leachate flows of FAP #2. Motiva shall include a discussion of any corrective measures taken or anticipated.
- d. Surface water monitoring results, including whether the results indicate a contaminant release from FAP #2 to surface water, and any corrective measures required or anticipated.
 - e. A discussion of any problems or concerns encountered during fieldwork, deviations from the sampling procedures, and of any problems with QA/QC procedures.
 - f. Recommendations for future environmental monitoring, maintenance and modification needs for the monitoring network, leachate collection system, and corrective actions.
3. Electronic Data Deliverables, in a format acceptable to the Department, containing quantitative results for groundwater, surface water, and leachate for the reporting year and laboratory quality control information.
 4. Tabulation of all data for the reporting year as specified below. Data submitted shall include:
 - a. Groundwater elevation and quantitative results (including field parameters).
 - b. Leachate collection system flow and quantitative results (including field parameters).
 - c. Rainfall data from the on-site weather station, or other third-party sources of local weather data. Motiva shall provide this data via electronic media only.
 5. Graphical presentations (quality versus time plots) of the following:
 - a. Groundwater data from the reporting year, and all preceding years, for Manganese, pH, Sodium, Sulfate, and Vanadium.
 - b. Leachate data from the reporting year, and all preceding years, for Manganese, pH, Sodium, Sulfate, and Vanadium.
 6. Graphical presentations (flow rate or volume versus time plots) of data from the reporting year, and all preceding years, for the leachate collection system flows. Rainfall data shall also be plotted on each graph.
 7. A potentiometric map for the surficial aquifer for the reporting year. This map shall include an outline of former FAP #1, FAP #2, and the adjacent property boundaries of the facility and include all monitoring locations required by this permit.
 8. Copies of legible field notes, laboratory data sheets, and chain-of-custody forms for the reporting year. Motiva shall submit these records via electronic media only.

C. Annual Post-Closure Care Report

Annually, no later than January 31st of each year, Motiva shall submit two (2) paper copies and one (1) electronic version, in a form acceptable to the Department, of the Annual Post-Closure Care Report for the preceding calendar year. Motiva shall include the following information in the Annual Post-Closure Care Report:

1. A narrative addressing Motiva's progress with establishing the Environmental Covenant required for FAP #2, to include the estimated submittal date.
2. A list of any deficiencies or damages identified with FAP #2 control systems during the reporting period (including the cap, liner, surface water controls, and leachate collection system) and status of repairs or corrections required.
3. A discussion of activities during the past year relevant to operation and maintenance of the leachate collection system.
4. A listing of notices, warnings, citation, fines, penalties, or other enforcement actions involving FAP #2.
5. Deviations from the inspections, monitoring, or reporting requirements specified by this permit.
6. Copies of all inspection forms completed in accordance with the conditions of this permit. Motiva shall submit these forms via electronic media only.
7. The report of the biennial leachate line cleaning, inspection, and assessment, if done during the reporting period. Motiva shall include a discussion of the assessment with findings and recommendations. Motiva shall include a drawing showing the areas cleaned and inspected and a table showing design lengths versus actual lengths cleaned and inspected. Motiva shall also provide the actual visual record of the inspection on electronic media (e.g., DVD).

D. Additional Reports

1. Motiva shall report to the Department any intentional or accidental deviation from this permit or any approved plan within one (1) business day of the discovery of the deviation.
2. Motiva shall report the results of each cleaning and inspection of the leachate collection system within sixty (60) days of completion.
3. As soon as practicable, Motiva shall notify the Department in writing of a change made to the Emergency Coordinator contact information.

4. Motiva shall report any complaint from the public regarding odor, dust, or litter at FAP #2. Motiva shall report this to the Solid and Hazardous Waste Management Section. Reporting may be via telephone or email.
5. If Motiva is unable to comply with any of the reporting requirements listed within the permit, Motiva must provide written notice and justification to the Department two (2) weeks prior to the reporting deadline for Department approval of the delay.

E. Notifications and Emergency Reporting

1. Motiva shall notify the Department as soon as practicable, and in no case longer than 24-hours after discovery of the following:
 - a. Fire or explosion, or any other incident at FAP #2 that may have an impact on human health or the environment.
 - b. Damage to the barrier layer of the final cover system (i.e., installed cap components) or the landfill liner system.
 - c. Malfunctions or damage to the leachate collection system.
 - d. Any anomalous observations during monitoring events; this includes, but is not limited to, any damage to the monitoring well or well casings, well obstructions, well-integrity concerns, and well depth.
 - e. Leachate spills exceeding 10-gallons.
 - f. Surface water contaminated with leachate.
2. If any event listed in Permit Condition IV.E.1 occurs during business hours, Motiva shall report the event to the Department's Solid and Hazardous Management Section by telephone at 302-739-9403. At all other times, Motiva shall report the event to the Department's TOLL-FREE 24-HOUR LINE 1-800-662-8802. When reporting an event to the TOLL-FREE line, Motiva shall disclose that the reporting is required in accordance with Permit SW-19/XX issued by the Solid & Hazardous Waste Management Section.
3. Motiva shall submit a written notification to the Department within five (5) business days following any event requiring "Emergency Reporting." The notification shall include the following:
 - a. Date and time of occurrence/discovery.
 - b. Date and time of reporting.
 - c. Agencies notified.
 - d. Materials and quantities involved.
 - e. Narrative describing how the incident occurred and the actions taken by Motiva and other response personnel.
 - f. Report of injuries/damage.
 - g. Proposal for follow-up, repair, or remedial actions required and a schedule.

F. Assessment of Corrective Measures

The following procedure must be initiated if the action leakage rate or the monitoring data indicate that a contaminant release to groundwater or surface water has occurred.

1. Motiva shall notify the Department within seven (7) business days after verified analytical data has confirmed that a release has taken place. Confirmation samples shall be collected from the appropriate monitoring points within fourteen (14) days of receipt of written approval by the Department. These samples shall be analyzed under a priority schedule for the indicator parameters and any other parameters deemed appropriate by the Department. Motiva shall notify the Department of the results of the confirmation sampling within seven (7) days of receipt of the results.
2. If confirmation sampling does not indicate that a release has taken place, another round of sampling shall take place to determine whether the results of the analysis from the first or second sampling events were anomalous. This re-sampling event shall take place within two (2) weeks of Motiva sending written notification to the Department of their intent to re-sample. The samples shall be analyzed under a priority schedule. Motiva shall notify the Department of the results of the re-sampling within seven (7) days of receipt of the results.
3. If the re-sampling indicates that no release has taken place, no further action shall be taken by the Department, and monitoring of the sampling location(s) shall be returned to its/their normal monitoring schedule. If the confirmation or re-sampling round of sampling does indicate that a release has taken place, Motiva shall perform an assessment of corrective measure within ninety (90) days of confirmation of the release. This assessment shall include:
 - a. Identification of the nature and extent of the release (which may require construction and sampling of additional wells, geophysical surveys, or other measures).
 - b. Re-assessment of contaminant fate and potential contaminant receptors (wells and/or receiving streams).
 - c. Evaluation of feasible corrective measures to:
 - (1) Prevent exposure to potentially harmful levels of contaminants (exceeding performance standards).
 - (2) Reduce, minimize, or prevent further contaminant releases.
 - (3) Reduce, minimize, or prevent off-site migration of contaminants.

V. RECORDKEEPING

A. General Recording and Maintenance

The following information shall be recorded and maintained by Motiva until the end of the Post-Closure Care Period. This information must be available for inspection, with reasonable notice, by representatives of the Department:

1. All documents cited in Permit Condition I.C.
2. Monitoring, testing, and analytical data required by previous permits, this permit, and DRGSW.
3. Copies of field notes, laboratory data sheets, and chain-of-custody forms for each sample analyzed.
4. The quantity and types of waste(s) placed into the landfill during its active life.
5. Records of all inspections required by the Post-Closure Care Plan and this permit.
6. Reports required by this permit.
7. Deeds, leases, covenants, and any land use agreements in effect. The deed notation, or some other instrument that is normally examined during the title search, will in perpetuity notify any potential purchaser of the property that the land has been used as a solid waste disposal facility, and the use of the land is restricted under DRGSW.
8. Records of all complaints received from the public concerning odors, dust, and litter at FAP #1 and FAP #2 during their operating life and during activities associated with the closure of FAP #1 and FAP #2.
9. Records of all periodic inspections of FAP #1 and FAP #2 during their operating life, to include inspections of the leachate collection system, groundwater monitoring wells, and dust control.
10. All environmental permits and approvals in effect for and FAP #2 or liquid pumped from FAP #2.
11. Records showing the quantity of leachate pumped from the leachate collection system.
12. Repairs made on any landfill control system, including drawings showing the location of the repair.
13. Records of the corrective actions required at FAP #1 and FAP #2.
14. A copy of the Closure Plan and Post-Closure Care Plan for FAP #1 and FAP #2.
15. A copy of the Final Report for the closure of the Fly Ash Ponds.
16. The Environmental Covenant required by the permit.
17. Post-Closure Care Contact Information as required by Permit Condition II.K.

VI. EVALUATING, OPTIMIZING, OR ENDING POST-CLOSURE CARE

A. Duration of Permit

Once issued, this permit shall remain valid and enforceable throughout the Post-Closure Care Period.

B. Modifying Post-Closure Care Requirements

At any time during the Post-Closure Care Period, the Department may reduce or eliminate any Post-Closure Care Permit requirements if Motiva can demonstrate that the requirement is no longer necessary for the protection of human health and the environment. Motiva may request the reduction or elimination of specific permit requirements after completing a performance-based evaluation. Performance-based evaluations shall include data review, a discussion of the proposed change and the anticipated impacts, as well as a plan to evaluate the impacts resulting from the proposed change or termination.

C. Requirements for Ending Post-Closure Care

1. Prior to the termination of the Post-Closure Care Period for FAP #2, Motiva shall provide an Environmental Covenant to the Department for its review. The Environmental Covenant shall be prepared in accordance with Section 6 of DRGSW and the requirements of 7 Del. C., Chapter 79, Subchapter II. The Environmental Covenant must include all property associated with FAP #2 which has been used for solid waste disposal or which contains landfill monitoring or control systems. Motiva shall record the Environmental Covenant within sixty (60) days of the Department's concurrence.
2. Prior to the termination of the Post-Closure Care Permit, Motiva shall provide performance-based evaluations of each landfill control system. Performance-based evaluations shall include data review, a discussion of the proposed change and the anticipated impacts, as well as a plan to evaluate the impacts resulting from the proposed change or termination. Landfill control systems include those systems that manage leachate and landfill gas; that protect and monitor groundwater, surface water, and landfill stability; and that provide for cap protection and maintenance.

Internal document formatting

PERMIT MODIFICATION SYNOPSIS

SW-96/01

August 4, 2001: Extension until September 4, 2001, was granted as the permit application is under review by the Department.

September 4, 2001: Extension until November 4, 2001, was granted as the permit application is under review by the Department.

November 4, 2001: Extension until January 4, 2002, was granted by the Department due to the July 17, 2001, events.

January 4, 2002: Extension until March 4, 2002, was granted by the Department due to the July 17, 2001, events.

March 4, 2002: Extension until September 4, 2002, was granted by the Department due to the July 17, 2001, events.

September 4, 2002: Extension until December 4, 2002, was granted by the Department due to the July 17, 2001, events.

December 4, 2002: Extension until April 4, 2003, was granted by the Department, due to July 17, 2001 events.

April 4, 2003: Extension until August 4, 2003, was granted by the Department, due to July 17, 2001 events.

August 4, 2003: Extension until December 4, 2003, was granted by the Department, due to July 17, 2001 events.

December 4, 2003: Extension until January 16, 2004, was granted by the Department, to finalize permit for closure.

January 16, 2004: Extension until April 30, 2004, was granted by the Department, to finalize permit for closure. Specifically, this extension is granted to allow sufficient time to review and public notice the post-closure care plan for the closure permit.

April 30, 2004: Extensions until December 31, 2004, was granted by the Department, to finalize permit for closure. Specifically, this extension is granted to allow additional time to review and public notice the post-closure care plan and construction quality assurance plan for the closure permit.

December 30, 2004: Permit SW-96/01 was extended to August 26, 2005 to allow Motiva additional time to evaluate the waste containment capability of Flyash pond 2 and to gather additional information for closure of Pond 1 in accordance with the *Scope of Work, October 8, 2004, Flyash Ponds*. The permit was also modified to clarify the monitoring, inspection, maintenance, operation and recordkeeping requirements of the permit (sections IV.B.1, IV.B.2.a, IV.E.8, and VII.B.&C.), and to require wildlife deterrents (section IV.E.9). Section IV.A.3.b was corrected to strikeout groundwater elevation monitoring of wells C14 through C20 which do not exist and to add groundwater elevation monitoring for wells C35, C36, and C37. Wells C35, C36, and C37 were also added to the semi-annual groundwater sampling requirement contained in section IV.A.3.c. Section VI.B.6 was added to require quarterly progress reports of closure activities. Also, the Motiva's name has been corrected in the heading of the permit, as well as in sections IV, V, and VI. The permit modification is considered minor in accordance with the *Delaware Regulations Governing Solid Waste*, Section 4.A.7.b and 4.A.7.d(2).

August 25, 2005: Permit SW-96/01 was extended to August 25, 2006 to allow Motiva to complete the evaluation of the pond for closure as required, to dewater the pond, and to resubmit a closure plan. The permit modification is considered minor in accordance with the *Delaware Regulations Governing Solid Waste*, Section 4.A.7.d(3).

August 22, 2006: The Solid & Hazardous Waste Management Branch extended permit SW-96/01 until August 27, 2007 to accommodate Motiva's plan to close both fly ash settling ponds 1 and 2. Motiva is no longer using either pond for disposal and permit condition IV.E.1 has been changed to incorporate that as a permit requirement. Permit condition V.A was also modified to require Motiva to provide a closure plan and schedule by December 31, 2006. This permit modification is considered minor in accordance with the *Delaware Regulations Governing Solid Waste*, Section 4.A.7.d(3).

August 21, 2007: The Solid & Hazardous Waste Management Branch extended permit SW-96/01 through February 29, 2008 to provide Motiva time to submit additional information required by the Department in support of the closure of fly ash settling ponds 1 and 2. This permit modification is considered minor in accordance with the *Delaware Regulations Governing Solid Waste*, Section 4.A.7.d(3).

February 28, 2008: The Solid & Hazardous Waste Management Branch extended permit SW-96/01 through June 27, 2008 to allow the Branch time to review and comment on supplemental information provided Motiva on February 19, 2008. This permit modification is considered minor in accordance with the *Delaware Regulations Governing Solid Waste*, Section 4.1.7.4.3.

Motiva FAP - Permit SW-19/XX

June 24, 2008: The Solid & Hazardous Waste Management Branch extended permit SW-96/01 through September 30, 2008 to allow the Branch time to review and comment on supplemental information provided by Motiva on February 19, 2008. This permit modification is considered minor in accordance with the *Delaware Regulations Governing Solid Waste*, Section 4.1.7.4.3.

September 29, 2008: The Solid & Hazardous Waste Management Branch extended permit SW-96/01 through September April 30, 2009 to allow the Branch time to review and comment on supplemental information provided by Motiva on February 19, 2008. This permit modification is considered minor in accordance with the *Delaware Regulations Governing Solid Waste*, Section 4.1.7.4.3.

April 30, 2009: The Solid & Hazardous Waste Management Branch extended permit SW-96/01 through May 22, 2009 after receiving an extension request from Motiva. The Branch granted the extension to Motiva to allow the Permittee time to review the Draft Closure Permit. This permit modification is considered minor in accordance with the *Delaware Regulations Governing Solid Waste*, Section 4.1.7.4.3.

May 29, 2009: After reviewing the supplemental information provided by Motiva on February 19, 2008 and November 13, 2008, the Solid & Hazardous Waste Management Branch modified permit SW-96/01 to allow closure of the Fly Ash Ponds. This is a major modification of the permit.

SW-19XX

[DATE HERE]: Permit SW-19/XX was issued to replace Permit SW-96/01. This permit regulates, in accordance with Delaware's *Regulations Governing Solid Waste*, Motiva's clean-closed FAP #1 and closed FAP #2, located on the grounds of the Delaware City Refinery located at 4550 Wrangle Hill Road, Delaware City, Delaware. This permit incorporates permit conditions consistent with other Solid Waste Landfill Permits issued by the Department, post-closure care requirements, monitoring requirements, reporting requirements, and recordkeeping requirements. This is considered a major modification in accordance with Section 4.1.7 of DRGSW.